

## ABSTRACT OF THE DISCLOSURE

In an image formation apparatus, a discomfort probability  $P$ , calculated from an expression (a), fulfills a condition (b). Here,

$$\hat{P}_{i\omega} = 1/\{1 + \exp[-z]\} \quad \dots (a)$$

$$5 \quad \hat{P}_{i\omega} \leq 0.2725 \cdot \ln(\text{ppm}) - 0.6331 \quad \dots (b)$$

where  $z = A \times \text{sound pressure level } i + B \times \text{loudness } i + C \times \text{sharpness } i + D \times \text{tonality } i + E \times \text{impulsiveness } i + F$ ,  $i = 1, 2, 3, \dots, n$ ,  $A, B, C, D$ , and  $E$  are regression coefficients of parameters, and  $F$  is intercept, and  $A, B, C, D, E$ , and  $F$  satisfy the inequalities  $0.142 \leq A \leq 0.183$ ,  $0.300 \leq B \leq 0.389$ ,  $1.097 \leq C \leq 1.265$ ,  $9.818 \leq D \leq 11.516$ ,  $2.588 \leq E \leq$

10  $3.240$ ,  $-18.844 \leq F \leq 14.968$ , ppm is a printing speed per minute for A4 horizontal size paper.